

WHAT IS CLAIMED IS:

1. A hand-held electronic device comprising:

a first surface having a plurality of input elements configured to receive input from a human user through manipulation of the plurality of input elements by one or both of the human user's thumbs or a stylus, wherein at least one of the input elements is further
5 configured to provide selective access to more than one input function; and

a second surface having one or more selection elements configured to be manipulated by one or more of the human user's fingers, wherein manipulation of a selection element causes the input function of one or more input elements to change.

- 10 2. The device of claim 1, wherein the first and second surfaces are arranged so as to optimize a biomechanical effect of the human user's opposing thumb and fingers.

3. The device of claim 1, wherein at least one of the selection elements is a pressure sensor pad configurable to represent a plurality of delineated active areas, wherein
15 manipulation of a delineated active area causes the input function of one or more input elements to change.

4. The device of claim 3, further comprising a shape changing media configured relative to the pressure sensor pad so as to permit the human user to tactilely discriminate
20 between the plurality of delineated active areas.

5. The device of claim 1 further comprising a processor, wherein the processor receives signals generated by the input elements and selection elements when manipulated by the human user.

5 6. The device of claim 1 further comprising an input controller, wherein the input controller receives signals generated by the input elements and selection elements when manipulated by the human user and converts the signals into a form suitable to be interpreted by a processor.

10 7. The device of claim 1, wherein at least one of the selection elements is a rotary dial.

8. The device of claim 1, wherein at least one of the selection elements is a D-pad.

15 9. The electronic device of claim 1, further comprising at least one palpable detent, wherein the detent is associated with at least one of the input elements or selection elements so as to provide tactile feedback to the human user when the human user manipulates the element associated with the palpable detent.

20 10. The electronic device of claim 1 further comprising one or more vibratory or force producing units, at least one of the vibratory or force producing units capable of providing tactile feedback upon the human user's manipulation of at least one of the input elements or selection elements.

11. The electronic device of claim 10, wherein at least one of the vibratory units provide tactile feedback in response to events occurring in a software application running on a processor.

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12. A hand-held electronic device comprising:

a first surface having a plurality of input elements configured to receive input from a human user through manipulation of the plurality of input elements by one or both of the human user's thumbs or a stylus, wherein at least one of the input elements is further configured to provide selective access to more than one text symbol; and

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a second surface with one or more input element having one or more selectable active areas configured to be manipulated by one or more of the human user's fingers, wherein manipulation of an active area causes the text symbol of one or more input elements to change.

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13. The device of claim 12 further comprising a controller, wherein the controller receives signals generated by the human user's manipulation of the input elements or active areas.

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14. The device of claim 13 further comprising a dome cap positioned above at least one input element and capable of providing tactile feedback to the human user when the input element associated with the dome cap is manipulated.

15. The electronic device of claim 13 further comprising one or more vibratory units capable of providing tactile feedback.

16. The electronic device of claim 13 further comprising one or more force
5 producing units capable of providing tactile feedback.

17. A method for configuring a human interface and input system for use with a hand-held electronic device, the method comprising:

10 disposing on a first surface a plurality of input elements configured to receive input from a human user through manipulation of the plurality of input elements by one or both of the human user's thumbs or a stylus, wherein at least one of the input elements is further configured to provide selective access to more than one input function; and

15 disposing on a second surface one or more selection elements configured to be manipulated by one or more of the human user's fingers, wherein manipulation of a selection element causes the input function of one or more input elements to change

18. The method of claim 17, wherein each input element is labeled indicating each input function that can be selectively accessed by the input element.

20 19. The method of claim 17 further comprising connecting a controller to the input elements and selection elements, wherein the controller is capable of receiving signals generated by the human user's manipulation of one or more of the input elements or selection elements.

20. The method of claim 19, wherein at least one selection element having a plurality of active areas configurable by the controller to form a plurality of delineated active areas.

5 21. The method of claim 20 further comprising positioning a shape changing media relative to the one selection element having a plurality of active areas so as to permit the human user to tactilely discriminate between the plurality of delineated active areas.

10 22. The method of claim 17, wherein the first and second surfaces are disposed so as to optimize a biomechanical effect of the human user's opposing thumb and fingers.

23. The method of claim 17 further comprising positioning a palpable detent with at least one input element or selection element so as to provide tactile feedback when manipulated by the human user.

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24. A method for inputting data on a hand-held electronic device having a first surface with a plurality of input elements configured to receive input from a human user through manipulation of the plurality of input elements by one or both of the human user's thumbs or a stylus, wherein at least one of the input elements is further configured to provide selective access to a plurality of symbols in a data input mode, wherein each of the plurality of symbols is associated with a unique index position identifier, and a second surface having one or more selection elements configured to be manipulated by one or more of the human user's fingers, wherein each selection element corresponds to one of the unique index position identifiers, the method comprising:

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determining the index position identifier of a desired symbol to be inputted;
pressing the selection element corresponding to the index position identifier of
the desired symbol with any finger; and
pressing the input element configured to provide selective access to the
5 desired symbol with any thumb or the stylus.

25. The method of claim 24, wherein each input element is labeled indicating
each symbol that can be selectively accessed by the input element and a positional order in
which each symbol can be selectively accessed.

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26. The method of claim 24, wherein determining the index position identifier of
the desired character to be inputted comprises:

locating the input element configured to provide selective access to the
desired symbol; and

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counting from left to right the number of symbols preceding the desired
symbol labeled on the located input element, wherein the index position identifier of the
desired symbol is the number of symbols preceding the desired symbol plus one.

27. The method of claim 24, wherein at least one of the input elements or
20 selection elements is further configured to provide selective access to a plurality of modes, at
least one of the modes is the data input mode, the method further comprising enabling the
data input mode.

28. A method for a human user to input data on a hand-held electronic device using an interface and input system comprising a plurality of input elements in a thumb-manipulated assembly, wherein at least one input element is mapped to more than one text function, and one or more selection elements in a finger-manipulated input assembly, wherein each selection element is mapped to a unique shift position, the method comprising:

pressing a desired selection element with a human a finger to select a desired shift position; and

pressing a desired input element of the thumb-actuated input assembly with a human thumb to input a desired text character.

29. A hand-held electronic device comprising:

a first input assembly disposed on a surface of the electronic device, wherein the first input assembly comprises a plurality of input elements configured to be actuated by a human user's thumb;

a second input assembly disposed on a different surface from the first input assembly so as to optimize a biomechanical effect of the human user's opposing thumb and fingers, wherein the second input assembly comprises one or more input elements configured to be manipulated by one or more of the human user's fingers, wherein at least one input element being a configurable sensing surface so as to provide a plurality of delineated active areas; and

a memory comprising a mapping of the configurable sensing surface to the plurality of delineated active areas.